# Motivation for Terrorists to Use Weapons of Mass Destruction

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## INTRODUCTION

Like many of those in this room, my interest in WMD terrorism first took shape in the mid 1990's in response to Aum Shinrikyo's attacks with sarin nerve gas on the Tokyo subway and elsewhere. Something new seemed to be afoot. I was part of a small working group that formed under the auspices of the Chemical and Biological Arms Control Institute for the purpose of reading into the literature on terrorist interest in weapons of mass destruction. We quickly learned that there was very little such literature.

By and large, experts interested in the terrorism subject had devoted only a tiny fraction of their time and effort to thinking about weapons of mass destruction. Similarly, experts on weapons of mass destruction had devoted little time and effort to thinking about terrorism. There was some literature on terrorist interest in nuclear weapons. The only mention of terrorism with chemical and biological weapons (CBW) was typically in a

<sup>\*</sup> The views expressed here are those of the author and should not be attributed to the Institute for Defense Analyses or any of its sponsors. This is an edited transcript of a presentation made to the symposium and drawing on 27 powerpoint slides. This written version includes a small number of those slides for information purposes. But much of the remaining detail is not repeated here. The full set of slides is available from the author at broberts@ida.org.

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single paragraph or footnote in the writings about nuclear terrorism—as a lesser-included problem.

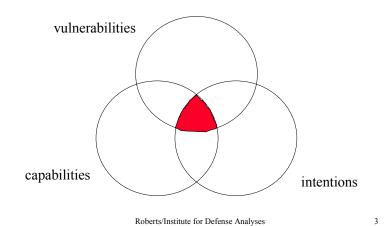
CBACI set out to help fill this gap in the literature and with the support of various foundations and Livermore Laboratory it has produced a series of studies on CBW terrorism.<sup>1</sup> What I have been asked to do here today is to review with you the learning curve that we have climbed.

The focus of this work has been on terrorist intentions vis-à-vis chemical and biological weapons. Are they motivated to exploit such weapons? Why have they done so only very rarely in history? Are they motivated to exploit such weapons for their full lethal potential (something only Aum has attempted)? This question of intentions and motivations has attracted little serious scholarly attention. After the mid-1990s, and especially after September 11, policymakers seem to assume that the motivation is clear and to focus instead on terrorist capabilities and the vulnerabilities of American society. Indeed, there has been a marked tendency to equate terrorist capabilities with terrorist intentions.

But it is nearly impossible to base policy on such a view of the threat. The vulnerabilities in American society are so numerous as to be incalculable—this is a natural consequence of life in an open, developed society. It is a fool's errand to try to close them all, not least because doing so would change our society in ways terrorists apparently desire. Terrorist capabilities are also improving and with the emergence of a "thinking, adaptive adversary" such as al Qaeda, predicting their future capabilities seems extremely difficult. Thus intentions must somehow inform the threat calculus. Without a view of the threat derived in this way, the sustainability of U.S. counterterrorism efforts is uncertain.

The nuclear realm offers an important lesson. Over past decades there are periods of great fear of nuclear terrorism, a spike in funding of activity, and then when nothing happens, the funding attenuates and the interest goes somewhere else. If you think as I do that there is a real risk of WMD terrorism, then this episodic interest is not helpful. An operationally useful view of the threat is one that integrates an assessment of their capabilities and intentions and our vulnerabilities because only with such an integrated assessment is it possible to target counterterrorism resources and keep the problem from being seen as "too hard."

# An Operationally Useful Threat Assessment



#### THE DEBATE ON INTENTIONS

In the debate about whether terrorists are motivated to seek mass casualties, former CIA director James Woolsey has staked out one of the clearest positions: in his view, the big event is right around the corner. Think November 1941, he says. Ehud Sprinzak, who has argued that the risks of superterrorism are greatly exaggerated and distract attention from the more real threats for which some useful solutions can be found, has defined the other pole in this debate.<sup>2</sup>

Many are inclined to see September 11th as vindication of Woolsey's point of view. In my view, it leaves the main question open. Had four teams of five people set out on September 11<sup>th</sup> to kill as many Americans as possible, far larger numbers of people would have died. Al Qaeda leaders have conveyed their surprise that the attacks actually brought down the World Trade Center buildings and have also explained their decision not to attack nuclear power reactors in the United States because things "would have gotten out of control." Was this restraint? Ineptitude? If they had WMD available to them, why didn't they use them?

In looking to historical experience to try to understand the "true intentions" of terrorists vis-à-vis WMD and mass casualties, something really big leaps out at you: there has been an awful lot of terrorism, including terrorism pointed at Americans, but there has been essentially no interest in WMD. That's not quite true and I will get to the caveats because they are important. But there is a stunning disconnect between all of this terrorism and the mass casualties question. How should we understand this? Why have terrorists refrained from WMD attacks? Why have they been so little interested in

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WMD? Why have those interested in WMD not sought to exploit them to their full lethal potential?

In 1996 we convened a study and tried to examine these questions. Our work led us to distinguish between two types of terrorists—so called "classical terrorists" and "new terrorists."

The former have been famously described by Brian Jenkins of the RAND Corporation as willing to use violence "like a volume control knob." They crank up the volume loud enough to get attention to their cause. But they have also learned that it is counterproductive to turn it up too loud. There is apparently a dividing line between killing "too many" and killing "enough." Enough permits you to gain your objective, but too many puts it out of reach. It creates a political willingness to ruthlessly suppress the group. It generates division within the group's leadership elite about how to execute their campaign; on those rare occasions when escalation to CBW was discussed by groups in the 1960s and 1970s, defections often occurred, as one or two individuals would turn state's evidence rather than be party to mass murder. Moreover, killing "too many" was seen by some groups to compromise their ability to extract the political concessions they were looking for. If the Palestine Liberation Organization had used a nuclear device to wipe out Tel Aviv, there would be no Palestinian Authority today.

But clearly Aum Shinrikyo was not a group of "classical terrorists." Aum is not looking for an immediate political concession of some kind and the achievement of sovereignty over some long-contested piece of turf. Its repeated and mercifully unsuccessful attacks with biological weapons on the Tokyo public suggest that Aum's leaders were unconcerned about the potentially counterproductive implications of turning up the volume control knob "too loud." Indeed, killing "enough" seemed to require killing an entirely different order of magnitude. Thus in addition to the "classical terrorists" there are evidently some "new terrorists" who appear not to be beholden to the forms of restraint that apparently shaped the thinking of previous groups about tactics and strategies. At the time of this work, 1996 and 1997, al Qaeda figured less prominently in our thinking—bin Laden had only just decreed the acquisition of WMD to be a "holy duty."

In 1999 we turned more detailed attention to the so-called "new terrorists." By this time in the policy community, the threat of transnational terrorism had gained considerable currency. So too had the fear of biological terrorism, not least as a result of hundreds of anthrax hoaxes in the United States. Various national commissions on terrorism were also regularly pronouncing on the severity of the threat though their recommendations seemed too often to fall on deaf ears. Some had the perceptions that those ears had been made deaf by descriptions of the threat that seemed unrealistic or depicted the problem as simply "too hard" to do anything about.

Therefore, in our study we set out to take this phenomenon apart analytically. We looked first at prior terrorist interest in CBW to investigate whether trends could be identified

with clear implications for the future. Then we examined different facets of the terrorism problem as it exists today—terrorism of the Left, the Right, etc—with an eye on two specific questions:

- What's happening here from the point of view of is there a rising interest in mass casualties?
- Is there an interest in any of the WMD?

# PAST TERRORIST INTEREST IN CBW

The Monterey Institute of International Studies has done some of the best work on past terrorist interest in CBW.<sup>5</sup> The institute was commissioned by a component of the IC to look at the instances in which groups have been known to be interested in chemical and biological warfare agents. There were roughly a dozen instances in which terrorists or terrorist groups explored the possible use of CBW between 1946 and 1998. Many of my contemporaries will remember the Alphabet Bomber in Los Angeles in the late 1960's or early 70's; he was one letter away from a chemical warfare agent as his bomb. It is interesting to note that some of the instances of alleged interest turn out to be just that—alleged, and nothing else. Among terrorism experts it was common knowledge that the Baader-Neinhof Gang had been interested in mustard gas though this turns out not to be the case. In weighing the significance of this case study work it is important to recall that there were hundreds of groups active over this time period.

A related piece of work was prepared by Seth Carus of the National Defense University and was subsequently published by NDU as *Bioterrorism and Biocrimes*. The accompanying graphic makes an important point. In the period of one year, between the first and last editions, his view of the data changed significantly, as people contacted him with additional stories and also as the anthrax hoaxes occurred.

## Past Terrorist Interest in CBW—Carus

Bioterrorism and Biocrimes: the Illicit Use of Biological Agents in the 20th Century

Edition 1 in August 1998: 45 confirmed cases

Edition 2: 52 cases (more came to light)

Edition 3: 53 cases (2 then in criminal court)

Edition 4: 70 cases (more cases occurred—anthrax threats)

Edition 5: 99 cases (more anthrax threats)

Edition 6 in July 1999: 142 confirmed cases (more anthrax) out of a total of 225 cases.

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What does this historical review suggest in the way of trends for the future? First, terrorist interest in CBW has risen over the last decade but still overall remains quite low. Second, criminals and extortionists have been much more interested in CBW than terrorists. Third, until the Tokyo subway attack, essentially nobody died and since then the only additional victims are those of the anthrax letters of autumn 2001—a tiny number compared with those that might have been killed with such mailings. Fourth, there has been a dramatic rise in the number of hoaxes; these cannot be discounted as non-events because they mobilize huge resources and can also cause fear. But our bottom line on trends was quite simply: it is difficult to see any. Terrorist interest in CBW has been so very low that it is difficult to draw with confidence many conclusions about motivations, capabilities, indicators, etc.

#### DISAGGREGATING TERRORISM

As noted earlier, the second part of this 1999 work looked at contemporary terrorism for what we could learn about "newness." For this work we drew heavily on the State Department's annual survey of terrorism. In 1999, that survey identified approximately 130 terrorist groups operating abroad.

Within this overall set we looked at eight categories of terrorism:

- Terrorism of the Left
- Terrorism of the Right
- National/Ethnic Separatists
- The Loner
- State-Sponsored Terrorism
- Transnational Terrorism
- Cyberterrorism
- Agroterrorism

As you may know, part of our national problem is that there is no common view of the terrorists operating abroad and those operating within the United States. Responsibility for producing these different threat assessments is divided institutionally within the U.S. government, between the Intelligence Community for the foreign threat and the FBI for the domestic one. The seams, connections, and disconnects are thus hard to see and understand—and that gets in the way of more effective policy.

#### **Terrorism of the Left**

Conspicuously, terrorism of the Left has essentially disappeared over the last decade and with it the risks of leftist interest in CBW terror. But it has not totally disappeared. As with the animal rights activists in the UK, there are radical value oppositionists (how one British participant in the study put it), who remain willing to kill in service of their

values. But there is no evidence that they are motivated to kill many with weapons of mass destruction.

# **Terrorism of the Right**

Terrorism of the Right is obviously in sharp ascendance, both nationally and internationally. By and large, these terrorists have seen conventional weapons as good enough. But there are also signs of interest in CBW.

## The National and Ethnic Separatists Groups

These groups constitute a very substantial chunk of the 130 groups monitored by the Department of State. These are, in some sense, the classic "classic terrorists" who utilize violence in order to make a case that they have a legitimate claim on a piece of territory or sovereignty. Hence their disincentives to engage in mass casualty attacks would appear to be numerous.

There is an interesting footnote here related to the Tamil Tigers in Sri Lanka. Reportedly, they experimented with the use of a chemical warfare agent in an attack on a military base; but apparently they suffered the usual fate of first users of chemical warfare agents, as the wind shifted and they did all the coughing and suffering rather than the soldiers on the target military base.

There is also an important caveat, related to what happens within these groups as they approach the negotiating endgame in the pursuit of a settlement of some kind. This process typically generates splinter groups from the usual terrorist organizations, groups that are disaffected with the bargains being struck. Groups such as the Real IRA and Hamas sometimes resort to acts of violence purposefully conceived to be more lethal and less discriminate as a way to disrupt the endgame process and/or to discredit the negotiators. They also resort to violence aimed at punishing those within their own circles who would cut deals. This points to a possible future interest in CBW.

#### The Loner

Loners are an important part of the terrorist picture – recall for example the Unabomber and Alphabet Bomber. They are innovators and are responsible for creating many terrorist tactics (such as airliner hijacking). They are unconstrained by the group dynamic described above (the potential for defectors when the group considers attacks of unprecedented lethality).

#### **State-Sponsored Terrorism**

Historically sponsors of terrorism have been unwilling to run the risks of aiding terrorists with WMD—risks including retaliation and isolation. For the moment at least, it would seem that this red line remains in place. But the leaders of rogue states are likely to

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consider attacks on civilian targets as part of their asymmetric war-fighting strategies, as discussed in more detail below. There is also the special problem of the loose control of WMD by weak and transition states.

#### **Transnational Terrorism**

In putting together this study 3 years ago, it proved impossible to find someone in the academic or policy world willing and able to write on this subject. That in itself, is testament to how much the times have changed. To be sure, there were experts on individual groups such as Aum and Al Qaeda. But there was no apparently no one who saw the problem "whole"—on groups that are not groups but networks, bound together as "communities of belief" and committed to the use of violence not for instrumental reasons but for apocalyptic or transformational ones

#### Cyberterrorism

This symposium includes an entire section on cyberterrorism so I will take little time here. Our work on this question can be quickly summarized as follows: cyberterrorism is a real and growing threat but there is no evidence to suggest that cyberterrorists are interested in exploiting this technique to kill. They prefer extortion and disruption to death.

#### **Agroterrorism**

Today there is a rising concern about BW attacks on livestock and crops. However, this concern appears to be driven largely by our own recognition of this particular vulnerability than by any evidence that terrorists are preparing to exploit it. This is another example of a place where the criminal intent seems more likely to run in the direction of extortion and disruption than death.

#### CONCLUSIONS ON MOTIVATIONS

This analysis suggests that not all types of terrorists are motivated to seek mass casualties. In fact, most are not so motivated.

Those least likely to seek mass casualties are:

- Terrorists of the Left
- National and Ethnic Separatists
- State Sponsored Groups
- Cyber Criminals.

A somewhat higher level of risks is posed by those terrorists who may have an interest in CBW but do not seem potentially motivated to seek mass casualties:

- Loners
- "Radical value oppositionists."

Those most likely to seek mass casualties are:

- Terrorists of the Right
- Transnational Terrorists
- States pursuing asymmetric strategies in war against the US.

The following section works through some additional arguments and information about each of these three categories. As we do so, bear in mind the following. First, by and large, these terrorists come together in networks, not formal organizations. Second, there is a heavily religious component in the identity and worldview of some of these actors. Many apparently believe that they have a divine decree from their God and a moral imperative to inflict violence. This moral university is very different from those concerned with short-term political gain.

# TERRORISTS OF THE RIGHT

Although we do not these days pay much attention to it, the militia movement in America has not gone away. They hate the federal government and fear its new strengths in the war on terror. After the mass slaughter of Oklahoma City, the hard-line leadership seems unrepentant. In the words of one, "terrorism is a nasty business…but terrorism is a form of warfare and, in war, most of the victims are noncombatants." Interest in the use of poisons dates back to the 1970s and demonstrably got much stronger in the 1990s. There has been some stockpiling of antibiotics and some praise of the "purgative effects" of plagues.

## TERRORISM IN ASYMMETRIC CONFLICT

In asymmetric conflicts involving a regional aggressor armed with WMD against the United States, that aggressor seeks to "escape" conflict by inducing certain strategic behaviors of the United States and its coalition partners. It may use WMD to generate fear, with an eye to inducing inaction in a crisis or withdrawal from a conflict. Or it may use WMD to tie down military assets in the United States (including especially CBW defense assets). From an American perspective, attacks on civilians would look like terrorism even if waged in time of war.

Here is a simple picture describing how an adversary might think about using WMD in a major theater war (MTW) against the United States. Begin in the lower left-hand corner, "strategic imperative in phase of war." Above that are a series of objectives that the

# How Would Adversary Use WMD in MTW?



adversary would seek to accomplish in war as it unfolds and escalates. To the right are three sets of targets. This illustration suggests the ways in which attacks on Western publics would look useful at different phases of such a conflict. Americans tend to think that any such use would be for full mass casualty purposes, but there are many uses of nuclear biological chemical (NBC) weapons that might fall well short of such effects while nonetheless serving the operational or political interests of the aggressor. This calls into question the credibility of retaliatory threats and thus their deterrent value.

#### TRANSNATIONAL TERRORISM

Most people do not appreciate that BW was the weapon of choice for Aum. It had three biological warfare agents and laboratories. The entire legal prosecution of Aum's leadership has proceeded only on the basis of evidence taken from one of those laboratories. When people say definitively, "Aum did X" – we do not know. We say "Aum tried bio nine times" - we do not know. We know they tried it at least nine times, probably more. The person who was in charge of the Aum bio program was mysteriously killed the morning after the attacks. There is some speculation and clear evidence that Aum purchased a lot of technology and expertise from inside Russia. In conducting their unsuccessful attacks on Tokyo, Aum members believed that they had killed millions. This is not terrorism as we have known it.<sup>6</sup>

Bin Laden has established the acquisition of WMD as a "holy duty" and much of the evidence from Afghanistan suggests that some progress was made. But actual capabilities appear to have been poorly developed. For the purposes of stimulating discussion in the symposium, let me assert my view that September 11<sup>th</sup> does not prove that this is an organization motivated to kill as many as it can. It was motivated, in my view, to strike various symbols and to demonstrate that it was unconcerned about the

collateral effects. It destroyed institutions that were important; but the purpose was not to kill as many as possible. It seems to me that when we come to the discussion of how al Qaeda might utilize nuclear weapons in its strategy, we have to have some understanding of whether this is the right view or the wrong view. If al Qaeda is simply bloody-minded, then we should expect much more punishment to come, including with WMD. If they are more calculating, then their use of WMD will be calculated for the effects it generates. These are not straightforward issues.

Obviously we are all struggling to come to terms with what Al Qaeda is going to do next and its WMD intentions. The challenge is somehow linking tactics to strategy—the use of violence to intended effects, political and strategic. I have found it useful to elaborate four analogies to illuminate the range of possibilities.

One analogy is to Tet—the offensive by North Vietnam that turned the tide of war its direction in spring 1968. Perhaps on September 11 bin Laden did what Ho Chi Minh did three decades earlier: throw your whole organization into the fray, put everything on the line, bet that you are going to change everything. It worked for Viet Nam.

A second analogy is quagmires and dominoes. This has emerged as conventional wisdom among us, which is always reason enough to just be a little worried. This analogy suggests that bin Laden's intention is to draw the United States into prolonged ground combat in regions of the world where we would have a difficult time winning and thus getting out. Prolonged stalemate would bring deepening debate and with it polarization that would cause the fall of local governments and the rise of more fundamentalist ones.

A third analogy is to Aum. Aum's leadership seemed to believe that a great WMD war among the United States, Japan, and others was coming, a war that would lead to an end to secular order as it is known in Japan. Aum was preparing for that post-secular world and, having prepared, determined then to be the catalyst of the transformation. Perhaps al Qaeda's leaders believe that what they are doing through violence is setting in motion a chain of events that will bring an end to the state system in the Islamic portion of the world. Fred Iklé has offered us a useful touchstone in this debate—a recent essay about how terrorists might exploit WMD in campaign style attacks to try to alter basic sociopolitical realities and thus transform international relations.<sup>7</sup>

A fourth analogy is to the Aztec and Inca empires of Central and South America. This is an odd analogy for most American but it may yet prove a particularly potent one. How many of us have wondered if bin Laden might really believe that the collapse of American power and society is possible? It seems almost incredible to us but that is not the point. Is it credible to him? I don't know, but it might be because there is at least this one model. Here we had relatively robust, long-lived, and by many measures of the time, powerful empires. From their first contact with an inferior and very foreign military force, it took but a decade for people to simply set down their things and walk away. What happened? The gods and kings of the Inca and Aztec empires could not protect the

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people. They died from smallpox, they lost confidence in their leaders, they left, and their power became irrelevant. Americans will not leave America but perhaps bin Laden believes they can be made to leave the Islamic world and thus render American power irrelevant in the region.

What does this review of motivations suggest then about the prospects for mass casualty terrorism? There are at least three categories of actors who seem to have the motivation to pursue nuclear, biological, and/or chemical weapons—terrorists on the Right, state actors in asymmetric conflicts, and transnational terrorists. It is easy to conceive their interest in these particular weapons. But it is more difficult to conceive their interest in exploiting these weapons for their full lethal potential.

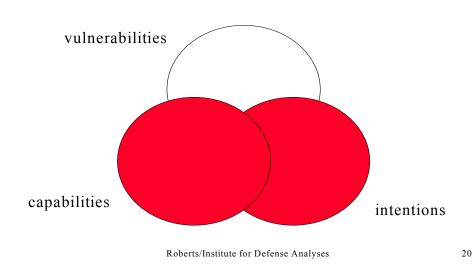
It is important in this regard to recall that these weapons can be used in very different ways. Take biological weapons, for example. The anthrax letter bomber could have killed millions but set out to kill only a handful of people. The Soviet Union was prepared to wage biological war on America in the wake of nuclear exchange for the sole purpose of setting back the recovery of post-war American society by decades if not centuries. There is an important distinction between an interest in WMD and an interest in mass casualties

For these three categories of terrorists, the potential appeal of WMD seems clear—as an instrument for generating fear and for causing casualties in levels known historically or akin to those of September 11. Terrorists on the Right seem unlikely to kill thousands or millions with any kind of weapon, as much as they might like to unleash a race war in America. State actors in asymmetric conflicts would consider mass casualty attacks only in the endgame of a major theater war, but whether their lieutenants would actually carry out acts of national suicide is an interesting question. The key uncertainty relates to the transnational terrorists. There are good reasons for thinking that al Qaeda is motivated to kill on a scale unknown in the history of terror. But there are also good reasons to think that its leaders would find the exploitation of WMD for their full lethal potential to be unhelpful to their cause. Alas, the policymaker is stuck with the fact of uncertainty here — and the need to prepare for the worst while hoping for the best.

# ARE THOSE MOTIVATED ALSO CAPABLE?

Let me close with a set of arguments about the linkage between terrorist motivations and terrorist capabilities. Are those motivated also capable? Do those with the intention to reap the full lethal potential of nuclear, biological, and/or chemical weapons also have the ability to do so?

# Are Those Motivated Also Capable?



The traditional answer is "no." For a long time prevailing wisdom in the expert community held to the view that access to a state WMD program was essential for a non-state actor to be able to exploit their mass casualty potential. After September 11 and especially after the anthrax letters, the opposite proposition has taken firm hold as conventional wisdom—that terrorists do not need states to do WMD effectively.

One common argument in support of this new conventional wisdom is that transnational criminal organizations are willing to do what states are not in the way of assisting WMD terror. There are good reasons to be skeptical on this score. Transnational criminal organizations are parasites—they depend on the health of body on which they live. Terrorists have occasionally turned to criminals for help. More often than not, criminals have turned them in. They're bad for business. These organizations are not going to rush in where states have feared to tread.

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A second argument sometimes made is that the Internet can provide what state programs will not—clear mastery of the requirements of effective CBW attack. There is reason to be skeptical here as well. The types of scientific, technical, and engineering expertise necessary for effective weaponization are not readily available on the net. Indeed, they remain extremely rare. Although as the anthrax mailings attest, they are not rare enough.

A further consideration for the non-state actor is whether he can do the experimentation and training that might otherwise be found in a state program. This was Aum's downfall. Effective creation and use of nuclear, biological, or chemical weapons in a way that reaps their full mass casualty potential requires mastery of a very diverse set of skills. You have to be able to know what you need and then to get it and then to master each skill and then to put them all together. Those skills require regular practice—covertly. Here in the laboratory environment, these skills are developed, assembled, and tested in the experimentation process. As you have taught me, successful experimentation is built on failure after failure. Success comes as you implement what you've learned along the way. Aum punished failure, as do many terrorist groups. In Aum, failure was often met with a bizarre and grisly ritual in which the leader of a group that had failed at something was fried to death in an industrial-sized microwave oven in front of the group. Aum was an organization that was motivated to do WMD but not capable. This is an important data point for us.

So the conclusion of this line of work is that of those motivated to seek mass casualties, some significant percentage are likely to find that full exploitation of WMD may prove unreasonably difficult. Alas, they have got other things available to them, like airplanes.

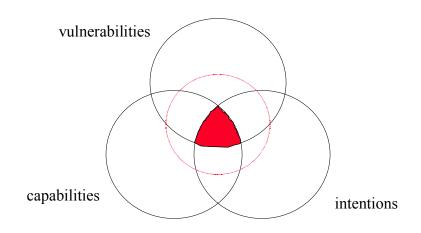
#### CONCLUSIONS

In this work we have tried to assess the motivations factor in the threat equation. We have come to various conclusions:

- As the face of terrorism changes, so too are the prospects for WMD terrorism.
- Those prospects of terrorism remain highly uncertain.
- There are many signs of rising terrorist interest in chemical and biological warfare agents and also of a willingness to inflict increasingly indiscriminate attacks.
- But the evidence that terrorists are motivated to reap the full lethal potential of WMD is not so far very persuasive.
- And the evidence that they have the ability to do so is similarly murky.

Let me close with this slide, returning to the visual image used at the start. The fact that we cannot clearly know terrorist intentions means that we cannot confidently describe the intersection of intentions, capabilities, and vulnerabilities. Nevertheless, we can also understand that the three have not merged into a single whole—that terrorists do not have the intention or the capability to exploit fully with WMD the vulnerabilities of our open society.

# The "Right" Threat Assessment



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Brad Roberts is a member of the research staff of the Institute for Defense Analyses (IDA) in Alexandria, Virginia, where he contributes to studies for the Office of the Secretary of Defense and the joint military staff. His areas of expertise are counterproliferation, nonproliferation, counterterrorism, and NBC weapons. He has directed or participated in projects on various topics including for example: a strategic assessment of the Defense Counterproliferation Initiative; the counterproliferation requirements of operations other than major theater war; nuclear deterrence stewardship to 2015; NBC war termination issues in major theater war; the just war tradition and the politics of preemption against NBC-armed rogues; nuclear and biological weapons proliferation trends in the Middle East and Asia.

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## **Endnotes**

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<sup>&</sup>lt;sup>1</sup> Information on CBACI and the publications discussed here is available at <a href="www.cbaci.org">www.cbaci.org</a>. The author is Chairman of the institute's Research Advisory Council and a member of its board of trustees.

<sup>&</sup>lt;sup>2</sup> Ehud Sprinzak, "The Great Superterrorism Scare," Foreign Policy (Fall 1998).

<sup>&</sup>lt;sup>3</sup> Brad Roberts, ed., *Terrorism With Chemical and Biological Weapons: Calibrating Risks and Responses* (Alexandria, Va.: Chemical and Biological Arms Control Institute, 1997).

<sup>&</sup>lt;sup>4</sup> Brad Roberts, ed., *Hype or Reality? The 'New Terrorism' and Mass Casualty Attacks* (Alexandria, Va.: CBACI, 2000).

<sup>&</sup>lt;sup>5</sup> Jonathan B. Tucker, ed., *Toxic Terror: Assessing Terrorist Use of Chemical and Biological Weapons* (Cambridge, Mass.: MIT Press, 2000).

<sup>&</sup>lt;sup>6</sup> David E. Kaplan and Andrew Marshall, *The Cult at the End of the World* (New York: Crown Publishers, 1996). See also Robert J. Lifton, *Destroying the World to Save It: Aum Shinrikyo, apocalyptic Violence, and the New Global Terrorism* )New York: Holt, 1999).

<sup>&</sup>lt;sup>7</sup> Fred C. Iklé, "The Next Lenin: On the Cusp of Truly Revolutionary Warfare," *National Interest* 47 (Spring 1997), pp. 9-19.